'The Bug Stops Here!' Nipah Encephalitis; Kerala 2019

Sir,

Nipah infection [NiV] recently claimed 17 lives in the Kerala Outbreak of May 2018.[1] NiV is a negative-stranded RNA paramyxovirus and has a mortality rate of 40-75%. A 23-year-old man presented to our hospital with high grade fever, chills, and rigors for a duration of 10 days. On examination, he had fever, conjunctival congestion, drowsiness, dysarthria, severe ataxia, spontaneous and action induced myoclonus, tachycardia and tachypnea. Diffusion-weighted MRI [DWMRI] showed multiple tiny hyperintensities throughout the cerebral hemispheres, cerebellum and ponto-mesencephalic area with restricted diffusion ['Starry sky appearance'] [Figure 1].

Extensive serology and blood cultures were negative. Echocardiogram, Chest X-ray and ABG were normal. LP-CSF on day 1 after admission showed 53 cells [Polymorphs 5%, Lymphocytes 95%] with normal sugar and protein. CSF [Acute encephalitic syndrome; AES panel [XCyton Diagnostics Ltd, Bengaluru] was positive for NiV on day 2. He was immediately shifted to a negative pressure isolation room and universal, standard droplet and bio-contaminant precautions were implemented. Real-time [RT-PCR], nested RT-PCR and anti-Nipah human IgM and IgG antibodies by ELISA were tested. He was started on oral Ribavirin for 11 days [Figure 2]. Contact identification and preventive measures were immediately initiated by the local health authorities. More than 300 people were placed under observation and 8 symptomatic contacts were quarantined. All of them tested negative. By day 21, all 3 samples were negative for NiV RT-PCR and isolation precautions were discontinued. He was started on IVIG 2 gm/kg × 5 days for persistent dysautonomia [Figure 3].

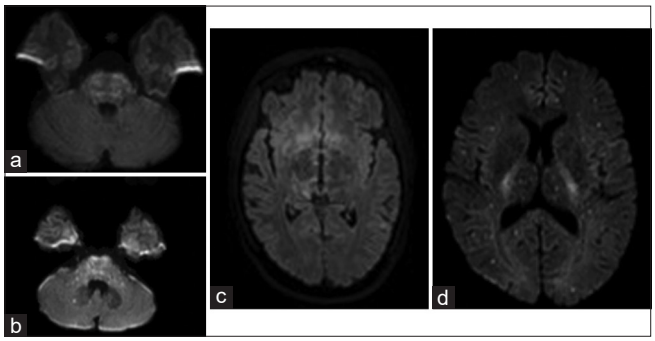

Figure 1: MRI Diffusion weighted image [DWI] sequences. Panel A shows tiny punctate lesions in the pons. Panel B shows pontine lesions extending into the middle cerebellar peduncels and a few lesions in the cerebellum. Panel C shows punctate lesions in the thalamo-hypothalamic area. Panel D shows the 'Starry sky' appearance of multiple cortical and subcortical hyperintensities

From day 24, Echo showed persistent pulmonary artery hypertension [PAH], likely due to NiV pulmonary vasculitis [C-ANCA, P-ANCA and thromboembolic workup were negative] [Figure 2]. At discharge [day 52] he still had resting tachycardia, exertional dyspnea and cortical poly-mini-myoclonus.

After an incubation period of 5-14 days, NiV presents as an AES.[2] Encephalitis or brainstem involvement indicates a poor prognosis.[2,3] NiV causes an extensive small vessel vasculitis affecting most organs.[4] Tiny [<5 mm] necrotic plaques are scattered in the white and grey matter accounting for the 'Starry sky' appearance on MRI.[5,6] The term 'Patient Zero' refers to the index case in a communicable disease or the first incident in the onset of a catastrophic trend.

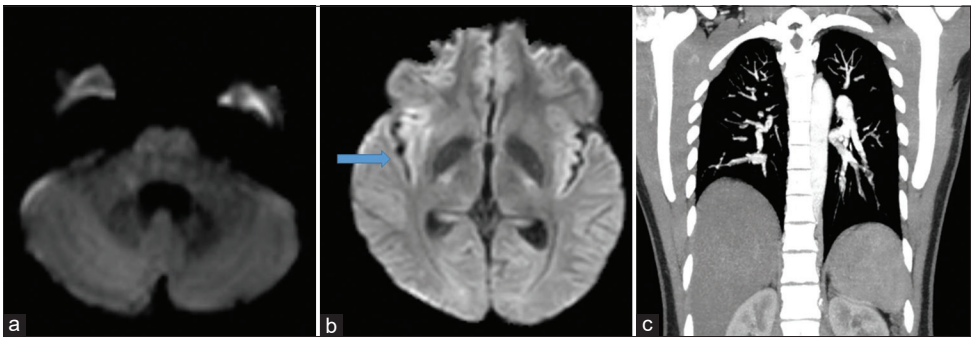

Figure 2: MRI DWI sequences. Picture on the left showing resolution of pontine DWI lesions. Picture on the right shows a right insular DWI hyperintensity. Panel on the extreme right, CTPA; shows normal pulmonary vasculature

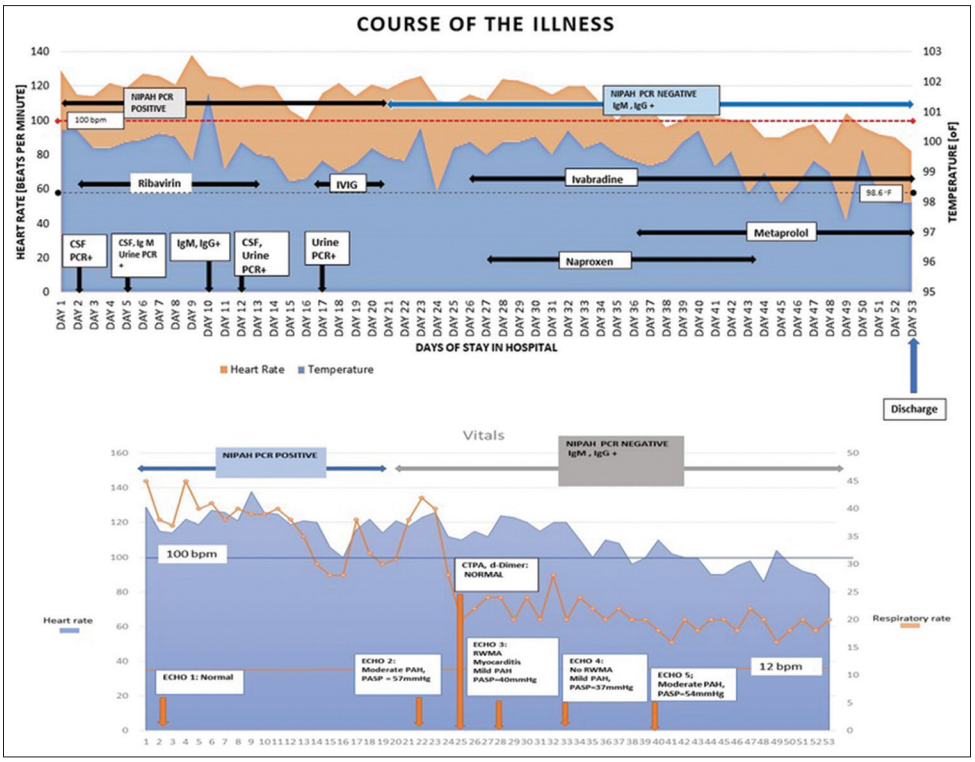

Figure 3: Shows the clinical features of the patient during hospitalization

In 2019, a NiV outbreak was stopped at 'Patient Zero' in Kochi; an unusual phenomena and moreover due to the protracted hospitalization, we could identify uncommon features of NiV infection such as dysautonomia, transient myocarditis and pulmonary arterial hypertension.

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Conflicts of interest
There are no conflicts of interest.

References

1. Arunkumar G, Chandni R, Mourya DT, Singh SK, Sadanandan R, Sudan P, *et al*. Outbreak Investigation of Nipah Virus Disease in Kerala, India, 2018. J Infect Dis 2019;219:1867-78.
2. Hsu VP, Hossain MJ, Parashar UD, Ali MM, Ksiazek TG, Kuzmin I, *et al*. Nipah virus encephalitis reemergence, Bangladesh. Emerg Infect Dis 2004;10:2082-7.
3. Tan IL, Mowry EM, Steele SU, Pardo CA, McArthur JC, Nath A, *et al*. Brainstem encephalitis: Etiologies, treatment, and predictors of outcome. J Neurol 2013;260:2312-9.
4. Wong KT, Shieh WJ, Kumar S, Norain K, Abdullah W, Guarner J, *et al*. Nipah virus infection: Pathology and pathogenesis of an emerging paramyxoviral zoonosis. Am J Pathol 2002 161:2153-67.
5. Garg M, Kulkarni SD, Sayed R. Starry-sky appearance in neurotuberculosis. Pediatr Neurol 2016;64:101-2.
6. Sun LR, Huisman TA, Yeshokumar AK, Johnston MV. Ongoing cerebral vasculitis during treatment of rocky mountain spotted fever. Pediatr Neurol 2015;53:434-8.

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